

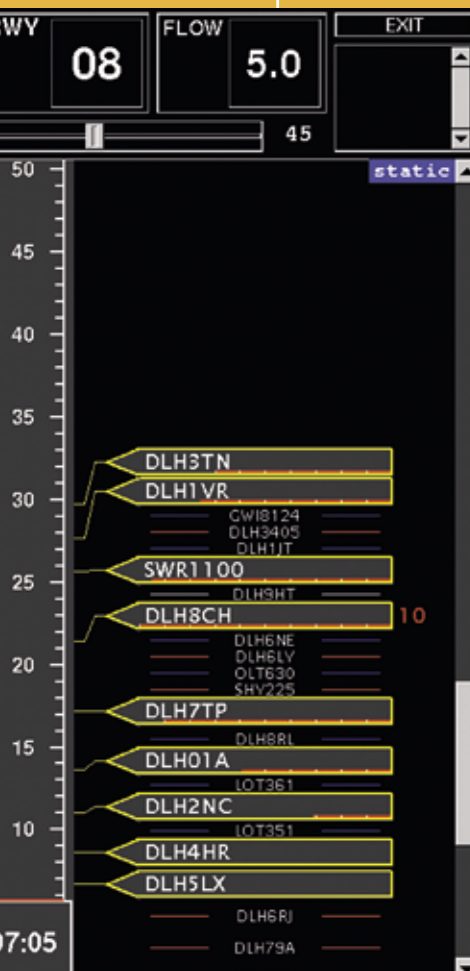
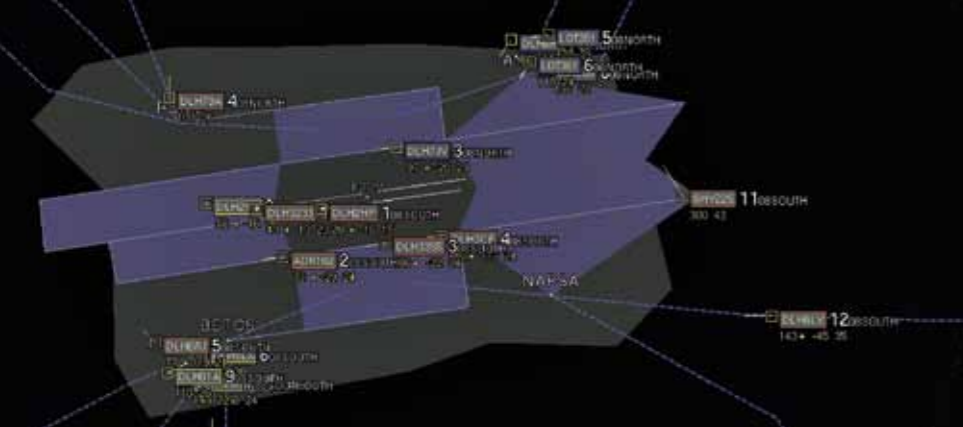
A-AMAN

Advanced Arrival Management System

More capacity at your hub



DFS Deutsche Flugsicherung



More movements, more efficiency, reduced costs and reduced environmental impact. This is the approach of the advanced arrival management system of DFS Deutsche Flugsicherung GmbH. The modular arrival manager is able to register all arriving aircraft within a range of up to 200 miles and more around the airport. It then continuously calculates hand-over and landing times on the basis of different parameters, such as speed, current and predicted flight path, traffic density and controller activities and calculates an optimal approach sequence. This way A-AMAN supports controllers in meeting safety requirements while enabling the maximum utilisation of high density airspaces.

Generic and modular structure

The tool can easily be integrated in existing environments due to its generic and modular structure. Customer-specific needs can be taken into account. In combination with a departure manager, controllers are provided with an optimum sequence of arrivals and departures plus the corresponding departure and arrival times. This allows for optimal planning and allocating resources for airlines, airport operators and ground handlers. Thus, an efficient solution with reduced costs is what we deliver.

Dynamic and flexible planning

A-AMAN enables the dynamic and flexible planning of arrivals. Using A-AMAN, controllers can make optimal use of the continuously updated data when planning arrivals. The advanced arrival manager uses flight plans, radar data as well as aircraft performance data to suggest to the controllers the most

efficient sequence of arrivals as well as the best sector handover procedure and precise landing times. Additionally, the system identifies different aircraft characteristics and automatically assigns the required separation parameters, which ensures efficiency and safety. A-AMAN immediately recognises and handles any deviations between the traffic situation and the current planning, which could affect traffic development. In the case of runway changes or missed approaches, the system automatically makes an up-to-date planning suggestion to the controller. This is an important benefit at busy hubs. The strategy of “planning the standards and identifying the exceptions“ reduces the controllers’ workload considerably.

Airspace capacity used to the full

As the system registers aircraft in a large geographical area, en-route, approach and tower controllers all work with the same up-to-date planning data. En-route controllers can sort out the arriving aircraft before handing them over to the approach controllers. This facilitates the coordination between sectors involved and reduces the need for manual coordination. Airspace capacity is used to the full, and delays are minimised. Less aircraft in holdings and optimal separation of aircraft on final approach lead to lower fuel consumption and less noise and pollution. These benefits enable international hubs to operate in a successful manner. Today – and in the future.

Information management

The provision of reliable information on inbound aircraft is not only valuable to air traffic controllers but also to airlines, airport operators or ground handlers. Therefore, A-AMAN presents an ideal contribution to collaborative decision making (CDM). By optimally sharing information with all partners involved CDM allows you to take

the right operational decisions at the right time. CDM is an important step in optimising airport operations to boost industry performance and to increase information reliability.

References

Munich became the second airport after Frankfurt to implement the advanced arrival management system. Now the two largest international hubs in Germany, which – like Amsterdam, Brussels and Paris – are located under the main European traffic flows, have the latest technology in the field of arrival management. The Berlin Brandenburg International Airport as well as an upgrade for the fourth runway for Frankfurt Airport will follow soon. From 2011 on, the Brazilian air navigation services organisation will also use the arrival manager “made in Germany”; it will be first implemented in Brasilia and São Paulo, followed by other airports enabling the Brazilian air navigation service provider to meet the challenges of upcoming events such as the World Cup and Olympic Games, as well as the predicted traffic growth in the country.

A-AMAN benefits

- Approach planning for defining the approach sequence for the entire area of responsibility of an airport;
- Arrival management for calculating precisely timed approach paths based on the definitions generated by approach planning, from the point where aircraft enter the planning area to the runway threshold;
- Approach monitoring for continuous moni-

toring of separation between all aircraft in the terminal control area and compliance with the planned 4D approach paths;

- Information management server providing reliable information to all airport stakeholders.

A-AMAN features

- Intelligent detection / prediction of aircraft behaviour and controller actions;
- No frozen sequences;
- Variable separation based on wake turbulence category and aircraft database down to individual registration;
- Track shortening via automatic detection and re-sequencing;
- Automatic change of the operating scenario, such as change of runway direction;
- Automatic flexible runway detection during the last 6 NM on final;
- Easy configuration and adaptability of operational concept via map editor;
- Uses any type of radar data format;
- Uses any type of flightplan data format;
- Inexpensive hardware – Linux based Common High Availability Platform (CHAP);
- API for external processing / adaptation;
- Timed approaches over fix (CDA).

A-AMAN options

- Multi sensor fusion (Radar, ADS-B MLAT, WAM)
- Multi FIR support like amalgamation of radar track data and distribution of planning data
- Built-in simulator to test effect of new operational concepts/airspace design – Rapid Arrival Air Space Prototyping (RAASP)



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Imprint

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